## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of detecting a first signal in a received signal (y) using a pattern ($\hat{s}$), the received signal (y) comprising at least one signal group ($y^{(1)}, \ldots, y^{(J)}$), each signal group comprising a number (K) of signal symbols, the pattern ($\hat{s}$) comprising at least one pattern group ($\hat{s}^{(1)}, \ldots, \hat{s}^{(J)}$), each pattern group comprising at least a number (K) of pattern symbols, ~~wherein~~ the method comprising ~~comprises the steps of~~:

- multiplying, for each of said at least one signal group ($y^{(1)}, \ldots, y^{(J)}$), ~~multiplying~~ each signal symbol with a corresponding pattern symbol of ~~a~~ said at least one pattern group ($\hat{s}^{(1)}, \ldots, \hat{s}^{(J)}$) and deriving a sum ($\Sigma_1, \ldots, \Sigma_J; A_j$) of the products of multiplication;~~,~~

- applying a weight factor ($x_1, \ldots, x_J; \hat{C}_j$) of one or more weight factors ($x_1, \ldots, x_J; \hat{C}_j$) to each sum ($\Sigma_1, \ldots, \Sigma_J; A_j$) giving a weighted sum ($x_1\Sigma_1, \ldots, x_J\Sigma_J; A_j/\hat{C}_j$), ~~where~~ wherein said one or more weight factors ($x_1, \ldots, x_J; \hat{C}_j$) are selected to preserve an orthogonality relation of said pattern symbols of the at least one pattern group;~~,~~ and

- determining if a signal is detected or not based on said one or more weighted sums ($x_1\Sigma_1, \ldots, x_J\Sigma_J; A_j/\hat{C}_j$).

2. (Currently Amended) ~~A~~ The method according to claim 1, wherein ~~c h a r a c t e r i z e d in that~~ said step of determining if a signal is detected or not comprises:

- adding said one or more weighted sums ($x_1\Sigma_1, \ldots, x_J\Sigma_J; A_j/\hat{C}_j$) giving a first result ($x_1\Sigma_1 + \ldots + x_J\Sigma_J; \Sigma_{j=1}^{J} A_j/\hat{C}_j; \Sigma_{j=1}^{J} CA_j/\hat{C}_j$);~~,~~ and

- comparing said first result with a detection threshold ($\tau, \tau_{FAR}$) in order to determine whether said signal is detected or not.

3. (Currently Amended) ~~A~~ The method according to claim 2, wherein ~~c h a r a c t e r i z e d in that~~ said detection threshold ($\tau, \tau_{FAR}$) is derived based on a signal to interference ratio of a common pilot channel (CPICH).

4. (Currently Amended) ~~A~~ The method according to claim 2, ~~characterized in that~~ wherein said detection threshold ($\tau, \tau_{FAR}$) is derived based on a signal to interference ratio, where the interference is estimated on the basis of symbols of the received signal (y) that should be zero.

5. (Currently Amended) ~~A~~ The method according to claim ~~claims 2 -~~ 4, wherein ~~characterized in that~~ said detection threshold ($\tau_{FAR}$) is derived based on a false detection rate factor ($l_{FAR}$) and a standard deviation ($\sigma_{\varepsilon}$) of the interference of the received signal (y).

6. (Currently Amended) ~~A~~ The method according to claim 1, ~~claims 1 — 5~~, wherein ~~characterized in that~~ said one or more weight factors ($x_1, \ldots, x_J$; $\hat{C}_j$) are derived on the basis of a signal to interference ratio (SIR) calculated for a common pilot channel (CPICH).

7. (Currently Amended) ~~A~~ The method according to claim 6, ~~characterized in that~~ wherein said signal to interference ratio (SIR) calculated for a common pilot channel (CPICH) is dependent on an estimate of the interference ($N_f^{(j)}$) for a given finger (f) and a given group (j), where said method further comprising ~~comprises the step of~~:

- averaging the estimate of the interference ($N_f^{(j)}$) over a predetermined

number of groups before deriving said one or more weight factors ($x_1, \ldots, x_J$; $\hat{C}_j$) on the basis of the signal to interference ratio (SIR) calculated for the common pilot channel (CPICH).

8. (Currently Amended) ~~A~~ The method according to claim 1 ~~claims 1 - 7~~, wherein ~~characterized in that~~ said first signal is an acquisition indicator channel (AICH) signal or a collision detection/channel assignment indicator channel (CD/CA-ICH).

9. (Currently Amended) ~~A~~ The method according to claim 1 ~~claims 1 — 8, characterized in that~~ wherein said received signal (y) is an estimated signal ($\sum_{f=1}^{F} y_{k,f}^{(AICH)} w_{k,f}^{*}$) derived on ~~the~~ a basis of one or more weighted channel estimates ($w_{k,f}$) and of de-spread symbols ($y_{k,f}^{(AICH)}$) from a RAKE, wherein the one or more weighted channel estimates ($w_{k,f}$) are based on a common pilot channel (CPICH).

10. (Currently Amended) ~~A~~ The method according to claim 1 ~~claims 1 – 9~~, ~~c h a r a c t e r i z e d in that~~ wherein said received signal (y) comprises two or three signal groups and that the pattern (ŝ) comprises at least two or three pattern groups.

11. (Currently Amended) A device for detecting a first signal in a received signal (y) using a pattern (ŝ), the received signal (y) comprising at least one signal group ($y^{(1)}, \ldots, y^{(J)}$), each signal group comprising a number (K) of signal symbols, the pattern (ŝ) comprising at least one pattern group ($\hat{s}^{(1)}, \ldots, \hat{s}^{(J)}$), each pattern group comprising at least a number (K) of pattern symbols, ~~wherein~~ the device comprises:

- means ~~(201, 201a, 201b)~~ adapted to for each of said at least one signal group ($y^{(1)}, \ldots, y^{(J)}$) to multiply each signal symbol with a corresponding pattern symbol of ~~a~~ said at least one pattern group ($\hat{s}^{(1)}, \ldots, \hat{s}^{(J)}$) and to derive a sum ($\Sigma_1, \ldots, \Sigma_J; A_j$) of the products of multiplication;~~,~~

- means ~~(202, 202a, 202b)~~ for applying a weight factor ($x_1, \ldots, x_J; \hat{C}_j$) of one or more weight factors ($x_1, \ldots, x_J; \hat{C}_j$) to each sum ($\Sigma_1, \ldots, \Sigma_J; A_j$) giving a weighted sum ($x_1\Sigma_1, \ldots, x_J\Sigma_J;\ A_j/\hat{C}_j$), where said one or more weight factors ($x_1, \ldots, x_J; \hat{C}_j$) are selected to preserve an orthogonality relation of said pattern symbols of the at least one pattern group;~~,~~ and
- means (102; 103) for determining if a signal is detected or not based on said one or more weighted sums ($x_1\Sigma_1, \ldots, x_J\Sigma_J;\ A_j/\hat{C}_j$).

12. (Currently Amended) ~~A~~ The device according to claim 11, wherein ~~c h a r a c t e r i z e d in that~~ said means ~~(102; 103)~~ for determining if a signal is detected or not further comprises:

- a summation circuit ~~(203)~~ for adding said one or more weighted sums ($x_1\Sigma_1, \ldots, x_J\Sigma_J;\ A_j/\hat{C}_j$) giving a first result ($x_1\Sigma_1 + \ldots + x_J\Sigma_J;\ \Sigma_{j=1}^{J} A_j/\hat{C}_j; \Sigma_{j=1}^{J} CA_j/\hat{C}_j$);~~,~~ and
- detection means ~~(204)~~ for comparing said first result with a detection threshold ($\tau, \tau_{FAR}$) in order to determine whether said signal is detected or not.

13. (Currently Amended) ~~A~~ The device according to claim 12, ~~characterized in that~~ wherein the device further comprises processing means ~~(103)~~ for deriving said detection threshold ($\tau$,$\tau_{FAR}$) based on a signal to interference ratio of a common pilot channel (CPICH).

14. (Currently Amended) ~~A~~ The device according to claim 12, wherein ~~characterized in that~~ said device further comprises processing means ~~(103)~~ for deriving said detection threshold ($\tau$,$\tau_{FAR}$) on the basis of a signal to interference ratio and for estimating the interference on the basis of symbols of the received signal (y) that should be zero.

15. (Currently Amended) ~~A~~ The device according to claim ~~claims 12 –~~ 14, wherein ~~characterized in that~~ the device further comprises processing means ~~(103)~~ for deriving said detection threshold ($\tau_{FAR}$) based on a false detection rate factor ($l_{FAR}$) and a standard deviation ($\sigma_\varepsilon$) of the interference of the received signal (y).

16. (Currently Amended) ~~A~~ The device according to claim 11 ~~claims 11 – 15~~, ~~characterized in that~~ wherein the device further comprises processing means ~~(103)~~ for deriving one or more weight factors ($x_1$, ..., $x_J$; $\hat{C}_j$) on the basis of a signal to interference ratio (SIR) calculated for a common pilot channel (CPICH).

17. (Currently Amended) ~~A~~ The device according to claim 16,~~characterized in that~~ wherein said signal to interference ratio (SIR) calculated for a common pilot channel (CPICH) is dependent on an estimate of the interference ($N_f^{(j)}$) for a given finger (f) and a given group (j), where said processing means ~~(103)~~ is further adapted to:

- average the estimate of the interference ($N_f^{(j)}$) over a predetermined

number of groups before deriving said one or more weight factors ($x_1$, ..., $x_J$; $\hat{C}_j$) on the basis of the signal to interference ratio (SIR) calculated for the common pilot channel (CPICH).

18. (Currently Amended) ~~A~~ The device according to claim 11 ~~claims 11 – 17~~, ~~characterized in that~~ wherein said first signal is an acquisition indicator channel (AICH) signal or a collision detection/channel assignment indicator channel (CD/CA-ICH).

19. (Currently Amended) A device according to claim 11 ~~claims 11 – 18~~, ~~c h a r a c t e r i z e d in that~~ wherein the device further comprises a combiner circuit ~~(101)~~ for deriving said received signal (y) as an estimated signal ( $\sum_{f=1}^{F} y_{k,f}^{(AICH)} w_{k,f}^{*}$ ) derived on the basis of one or more weighted channel estimates ($w_{k,f}$) and of de-spread symbols ( $y_{k,f}^{(AICH)}$ ) from a RAKE, wherein the one or more weighted channel estimates ($w_{k,f}$) is based on a common pilot channel (CPICH).

20. (Currently Amended) A device according to claim 11 ~~claims 11 – 19~~, wherein ~~c h a r a c t e r i z e d in that~~ said received signal (y) comprises two or three signal groups and that the pattern ($\hat{s}$) comprises at least two or three pattern groups.

21. (Currently Amended) ~~A~~ The method of claim 1, wherein the method is adapted to be used by a computer readable medium having stored thereon instructions for causing one or more processing units to execute ~~the method according to any one of claims 1 – 10~~.